# DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

#### LAKE TROPHIC DATA

## MORPHOMETRIC:

Lake: DURHAM RESERVOIR	Lake Area (ha):	4.37
Town: DURHAM	Maximum depth (m):	3.9
County: Strafford	Mean depth (m):	1.7
River Basin: Coastal	Volume (m³):	76500
Latitude: 43°08'40" N	Relative depth:	1.7
Longitude: 70°56'24" W	Shore configuration:	2.43
Elevation (ft): 90	Areal water load (m/yr):	16.31
Shore length (m): 1800	Flushing rate $(yr^{-1})$ :	9.30
Watershed area (ha): 148.2	P retention coeff.:	0.50
<pre>% watershed ponded: 0.0</pre>	Lake type: arti	ficial

BIOLOGICAL:	13 February 1996	27 July 1995
DOM. PHYTOPLANKTON (% TOTAL) #1	SPARSE - NO DOMINANT	ANABAENA 70%
#2		CERATIUM 20%
#3		
PHYTOPLANKTON ABUNDANCE (units/mL)		
CHLOROPHYLL-A (µg/L)		7.96
DOM. ZOOPLANKTON (% TOTAL) #1	DOMINATED BY CILIATES	KELLICOTTIA 52%
#2		NAUPLIUS LARVA 18%
#3		CONOCHILUS 11%
ROTIFERS/LITER	14	180
MICROCRUSTACEA/LITER	<1	81
ZOOPLANKTON ABUNDANCE (#/L)	56	261
VASCULAR PLANT ABUNDANCE		Abundant
SECCHI DISK TRANSPARENCY (m)		2.7
BOTTOM DISSOLVED OXYGEN (mg/L)	2.4	1.0
BACTERIA (E. coli, #/100 ml) #1		28
#2		
#3		

## SUMMER THERMAL STRATIFICATION:

## weakly stratified

Depth of thermocline (m): None Hypolimnion volume  $(m^3)$ : None Anoxic volume  $(m^3)$ : None

Lake: DURHAM RESERVOIR Town: DURHAM					
	13 February 1996		27 July 1995		
DEPTH (m)	1.0	3.0	1.0		3.0
pH (units)	6.2	6.4	7.4		6.8
A.N.C. (Alkalinity)	13.2	21.7	17.7		22.8
NITRATE NITROGEN	0.22	0.11	< 0.10		< 0.10
TOTAL KJELDAHL NITROGEN	0.40	0.60	0.55		0.67
TOTAL PHOSPHORUS	0.023	0.040	0.011		0.033
CONDUCTIVITY (µmhos/cm)	157.4	164.5	168.2		166.6
APPARENT COLOR (cpu)	115	115	48		100
MAGNESIUM			2.12		
CALCIUM			8.5		
SODIUM			20.3		
POTASSIUM			1.26		
CHLORIDE	33	31	37		34
SULFATE			7		7
TN : TP	27	18	50		20
CALCITE SATURATION INDEX			1.7		

All results in mg/L unless indicated otherwise

## TROPHIC CLASSIFICATION: 1995

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	3	5	1	9	Meso.

## **COMMENTS:**

- 1. Also known as Reservoir Pond and Old Durham Reservoir. This is not a drinking water reservoir; the town uses the Oyster River and a well for its public water supply.
- 2. This is a shallow artificial pond with abundant macrophyte growth and phytoplankton dominated by blue green algae. Chloride and conductivity values suggest salt runoff from roads.

## FIELD DATA SHEET

LAKE: DURHAM RESERVOIR
DATE: 07/27/95
TOWN: DURHAM
WEATHER: SUNNY & CALM

DATE: 0//2//95	WEATH	ER: SUNNY & CALM	
DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.1	27.4	8.4	105 %
1.0	26.7	8.2	101 %
1.5	25.2	9.2	111 %
2.0	24.3	8.2	97 %
2.5	22.1	4.0	46 %
3.0	20.0	1.0	11 %

SECCHI DISK (m): 2.7 COMMENTS:

BOTTOM DEPTH (m): 3.8

TIME: 1100

\*Dissolved oxygen values are in mg/L

66

## AQUATIC PLANT SURVEY

LAK	E: DURHAM RESERVOIR	TOWN: DURHAM	DATE: 07/27/95	
Key	PLANT	NAME		
Key	GENERIC	COMMON	ABUNDANCE	
T	Typha	Cattail	Scattered	
N	Nymphaea	White water lily	Scat/Common	
С	Ceratophyllum demersum	Coontail	Abundant	
x	Potamogeton	Pondweed	Sparse	
J	Juncus	Rush	Scattered	
b	Scirpus	Bulrush	Scattered	
a	Potamogeton amplifolius	Bass weed	Scat/Common	
Y	Nuphar	Yellow water lily	Sparse	
W	Potamogeton spp.	Thin-leaved pondweed	Common	
A	Sagittaria	Arrowhead	Scattered	
В	Brasenia schreberi	Water shield	Sparse	
f	Chlorophyceae	Filamentous green algae	Common	
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## OVERALL ABUNDANCE: Abundant

# **GENERAL OBSERVATIONS:**

- 1. Coontail was present over the entire visible bottom; it was much more abundant than indicated on the map.
- 2. Filamentous green algae was common over most of the bottom and clinging to much of the plant growth.